

**GREENLAWNS HIGH SCHOOL
FINAL EXAMINATION 2022**

**STD: 9
SUBJECT: PHYSICS**

**MARKS: 40
TIME: 1 HOUR**

NOTE:

- You will not be allowed to write during the first 10 minutes. Use this time to read the paper carefully.
- The time given at the head of this paper is the time allowed for writing the answers.
- All the questions are compulsory.

Question 1: (10)

- 1) Explain the three factors affecting the pressure at a point in a liquid. (3)
- 2) Complete the following: (3)
 - i) 1 A.U. = _____ m.
 - ii) 1 nm = _____ Angstrom.
 - iii) 1 metric ton = _____ kg.
- 3) i) A ball is dropped from the top of a tower. It acquires a velocity 30 ms^{-1} on reaching the ground. Calculate the height of the tower. ($g = 10 \text{ m s}^{-2}$) (2)
 - ii) What does sudden rise in the mercury level in barometer indicate regarding weather? (1)
 - iii) Why aneroid barometer is also called as Altimeter? (1)

Question 2: (10)

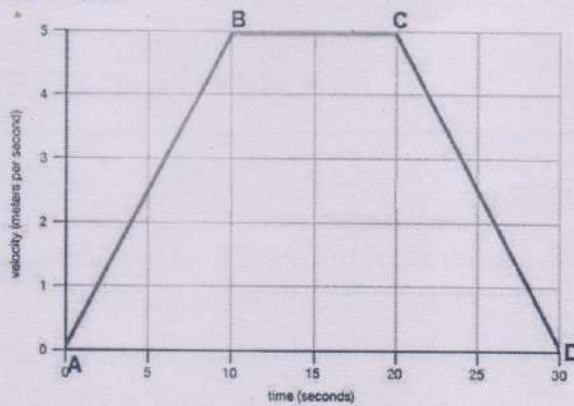
- 1) i) What does the slope of displacement-time graph represent? (2)
 - ii) Can displacement-time sketch be parallel to displacement axis? Give reason to for your answer.
- 2) i) Explain - An unloaded ship is filled with sand at its bottom. (2)
 - ii) Explain the two factors affecting upthrust on the body, when it is submerged inside the liquid. (2)
- 3) Show that the rate of change of momentum = mass \times acceleration. (2)
- 4) Write any two advantages of using mercury as a barometric liquid. (2)

Question 3: (10)

- 1) Write any 3 guidelines for writing the units. (3)
- 2) i) State the principle of hydraulic machines. (3)
 - ii) Write its mathematical expression.
 - iii) Name one device which works on this principle and its use.

3) The velocity-time graph of a moving body is given below, Find – (4)

Velocity-time graph



- the acceleration in part CD.
- the displacement in part AB.
- Does the body change its direction of motion?
- Which part of graph shows motion with uniform velocity?

Question 4:

(10)

- A solid weighs 45 gf in air and 42.5 gf in water. Find: (3)
 - R.D. of solid
 - The volume of solid.
- i) What is centre of buoyancy? (3)
 - Draw a diagram to show the forces acting on a body when it sinks inside the water. Also mark the position of centre of gravity and centre buoyancy.
- State the effects of force applied on- (2)
 - a rigid body.
 - a non-rigid body.
- Give reasons: (2)
 - It more difficult to stop the cricket ball than tennis ball, when both are moving with same velocity.
 - On striking the coin at bottom of a pile of carom coins with striker, lowest coin only moves away, while rest of the pile remains intact.